

Amendments to and listing of the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application, wherein deleted language is indicated by enclosure within double brackets or in strikethrough font and added language is underlined:

1. (Canceled)

2. (Currently Amended) The optical detection system of claim 1 An optical detection system comprising:

a spatial light modulator for modulating the phase of incoming light;

a photodetector having a plurality of photosensitive areas to receive the light of which the phase has been modulated by the spatial light modulator;

a photosensor selecting section for selecting at least one of the photosensitive areas and activating the selected photosensitive area effectively; and

a modulation control section for providing a modulation pattern, associated with the photosensitive area that has been selected by the photosensor selecting section, for the spatial light modulator,

wherein the photosensor selecting section cyclically switches the photosensitive areas to select by a time sequential technique, and

wherein synchronously with this switching operation, the modulation control section provides a modulation pattern, which produces appropriate imaging ability in the photosensitive area selected, for the spatial light modulator.

3. (Currently Amended) The optical detection system of claim [[1]] 2, wherein the modulation control section picks one of a plurality of prepared modulation patterns according to the photosensitive area selected.

4. (Currently Amended) The optical detection system of claim [[1]] 2, wherein the spatial light modulator is arranged on an optical path of an imaging optical system.

5. (Currently Amended) The optical detection system of claim 1 An optical detection system comprising:

a spatial light modulator for modulating the phase of incoming light;
a photodetector having a plurality of photosensitive areas to receive the light of
which the phase has been modulated by the spatial light modulator;
a photosensor selecting section for selecting at least one of the photosensitive
areas and activating the selected photosensitive area effectively; and
a modulation control section for providing a modulation pattern, associated with
the photosensitive area that has been selected by the photosensor selecting section, for the spatial
light modulator,

wherein the incoming light entering the spatial light modulator includes light rays with multiple different wavelengths.

6. (Original) The optical detection system of claim 5, wherein the photosensor selecting section chooses, as light to be modulated, a light ray falling within a particular wavelength range from the light rays with the multiple wavelengths.

7. (Original) The optical detection system of claim 6, wherein the photosensor selecting section cyclically switches the light rays to choose by a time sequential technique, and
wherein synchronously with this switching operation, the modulation control section provides a modulation pattern, which produces appropriate imaging ability with respect to the light ray chosen, for the spatial light modulator.

8. (Original) The optical detection system of claim 4, wherein the imaging optical system selectively exhibits one of multiple types of imaging characteristics, and
wherein the optical detection system further includes an imaging information sensing section for sensing information about the imaging characteristic that has been selected from the multiple types of imaging characteristics, and
wherein in accordance with the output of the imaging information sensing section, the modulation control section provides a modulation pattern, which produces an appropriate imaging ability, for the spatial light modulator.

9. (Original) The optical detection system of claim 8, wherein the imaging characteristic is an imaging magnification.

10. (Currently Amended) The optical detection system of claim [[1]] 2, wherein the modulation control section provides a modulation pattern, which deviates the incoming light that has entered at least a portion of the spatial light modulator out of the photosensitive area selected, for the spatial light modulator.

11. (Original) The optical detection system of claim 10, wherein the modulation control section provides a modulation pattern, which changes the area of that portion of the spatial light modulator, for the spatial light modulator.

12. (Original) The optical detection system of claim 11, wherein the modulation control section selectively provides either a first modulation pattern, which makes the area of that portion of the spatial light modulator relatively large, or a second modulation pattern, which makes the area of that portion of the spatial light modulator relatively small, for the spatial light modulator, and controls the respective durations of the first and second modulation patterns.

13. (Previously Presented) The optical detection system of claim 10, wherein the light that has been deviated out of the photosensitive area selected is incident on another photosensitive area of the photodetector.

14. (Currently Amended) The optical detection system of claim 1; An optical detection system comprising:

a spatial light modulator for modulating the phase of incoming light;

a photodetector having a plurality of photosensitive areas to receive the light of which the phase has been modulated by the spatial light modulator;

a photosensor selecting section for selecting at least one of the photosensitive areas and activating the selected photosensitive area effectively;

a modulation control section for providing a modulation pattern, associated with the photosensitive area that has been selected by the photosensor selecting section, for the spatial light modulator; and

further comprising a position change detecting section for detecting a change of the position of the optical detection system,

wherein in accordance with the output of the position change detecting section, the modulation control section generates a modulation pattern that compensates for a shift in focal point caused by the position change.

15. (Currently Amended) The optical detection system of claim 1, An optical detection system comprising:

a spatial light modulator for modulating the phase of incoming light;

a photodetector having a plurality of photosensitive areas to receive the light of which the phase has been modulated by the spatial light modulator, wherein each of the photosensitive areas in the photodetector has having a plurality of pixels arranged at a pitch;

a photosensor selecting section for selecting at least one of the photosensitive areas and activating the selected photosensitive area effectively; and

a modulation control section for providing a modulation pattern, associated with the photosensitive area that has been selected by the photosensor selecting section, for the spatial light modulator, and

wherein the modulation control section provides a modulation pattern, which focuses the incoming light at multiple points that are shifted from each other by a distance corresponding to the pixel pitch of the photodetector, for the spatial light modulator.

16. (Currently Amended) The optical detection system of claim [[1]] 2, wherein the spatial light modulator is a deformable mirror.

17. (Original) The optical detection system of claim 16, wherein the deformable mirror includes: a plurality of light reflecting areas that are arranged on a substrate; and an actuator for displacing the light reflecting areas at least perpendicularly to the substrate.

18. (Original) The optical detection system of claim 17, wherein the deformable mirror is coupled to multiple actuators that are associated with the respective light reflecting areas, and wherein by driving the actuators independently of each other, the light reflecting areas are displaced perpendicularly to the substrate and/or tilted with respect to the substrate.

19. (Currently Amended) The optical detection system of claim 1, An optical detection system comprising:

a spatial light modulator for modulating the phase of incoming light;
a photodetector having a plurality of photosensitive areas to receive the light of
which the phase has been modulated by the spatial light modulator;
a photosensor selecting section for selecting at least one of the photosensitive
areas and activating the selected photosensitive area effectively; and
a modulation control section for providing a modulation pattern, associated with
the photosensitive area that has been selected by the photosensor selecting section, for the spatial
light modulator,

wherein the spatial light modulator is a liquid crystal element.

20. (Currently Amended) The optical detection system of claim [[1]] 2, wherein each of the photosensitive areas of the photodetector includes a photoelectric modulating section, and

wherein the optical detection system further includes:

a memory for storing the outputs of the photoelectric modulating section in the photosensitive area that has been selected by the photosensor selecting section; and
a reconstructing section for reconstructing an overall image by rearranging the outputs stored in the memory.

21. (Currently Amended) The optical detection system of claim [[1]] 2, wherein the photodetector is a storage medium, of which a physical property changes when exposed to a radiation, and includes a shutter member that allows the photosensor selecting section to selectively transmit or cut off the incoming light.

22. (Currently Amended) The optical detection system of claim 1, An optical detection system comprising:

a spatial light modulator for modulating the phase of incoming light;
a photodetector having a plurality of photosensitive areas to receive the light of
which the phase has been modulated by the spatial light modulator;
a photosensor selecting section for selecting at least one of the photosensitive
areas and activating the selected photosensitive area effectively; and

a modulation control section for providing a modulation pattern, associated with the photosensitive area that has been selected by the photosensor selecting section, for the spatial light modulator,

wherein the spatial light modulator functions as an optical low pass filter.